ELECTRONICS

6BN11

COMPACTRON TWIN PENTODE

DESCRIPTION AND RATING

The 6BN11 is a compactron containing two sharp-cutoff pentodes. It is intended primarily for intermediate-frequency amplifier service in television receivers.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings.

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	0.8	Amperes

Direct Interelectrode Capacitances§

Section 1

Grid-Number 1 to Plate: (1g1 to 1p)	0.04	pf
Input: 1g1 to (h + 1k + 1g2 + 1g3 + 2g3 + i.s.)	12	pf
Output: 1p to (h + 1k + 1g2 + 1g3 + 2g3 + i.s.)	2.8	pf

Section 2

Grid-Number 1 to Plate: (2g1 to 2p)	0.03	pf
Input: 2g1 to (h + 2k + 2g2 + 2g3 + 1g3 + i.s.)	12	pf
Output: 2p to (h + 2k + 2g2 + 2g3 + 1g3 + i.s.)	2.8	pf

Coupling

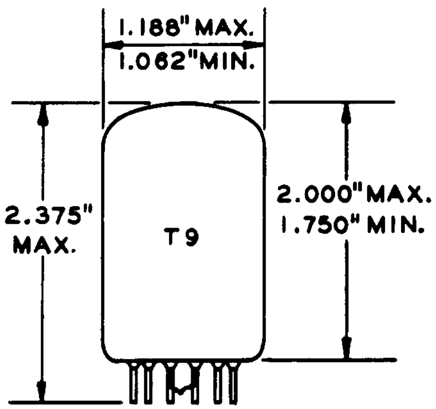
Cathode, Section 1 to Cathode, Section 2: (1k to 2k), maximum¶	0.02	pf
Grid-Number 1, Section 1 to Plate, Section 2: (1g1 to 2p), maximum	0.02	pf
Grid-Number 1, Section 2 to Plate, Section 1: (2g1 to 1p), maximum	0.003	pf
Plate, Section 1 to Plate, Section 2: (1p to 2p), maximum	0.01	pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Outline Drawing - EIA 9-58

Maximum Diameter	1.188	Inches
Minimum Diameter	1.062	Inches
Maximum Over-all Length	2.375	Inches
Maximum Seated Height	2.000	Inches
Minimum Seated Height	1.750	Inches

PHYSICAL DIMENSIONS

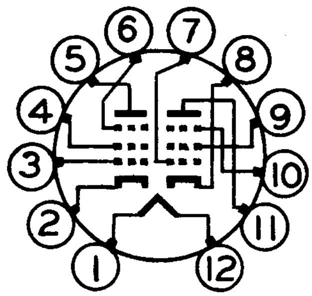


EIA 9-58

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Cathode (Section 2)
Pin 3 - Grid Number 1 (Section 2)
Pin 4 - Grid Number 2 (Screen) (Section 2)
Pin 5 - Plate (Section 2)
Pin 6 - Grid Number 3 (Suppressor) and Internal Shield (Section 2)
Pin 7 - Grid Number 1 (Section 1)
Pin 8 - Cathode (Section 1)
Pin 9 - Grid Number 2 (Screen) (Section 1)
Pin 10 - Grid Number 3 (Suppressor) and Internal Shield (Section 1)
Pin 11 - Plate (Section 1)
Pin 12 - Heater

BASING DIAGRAM



EIA 12GF

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES, Each Section

Plate Voltage	330	Volts
Screen Supply Voltage	330	Volts
Screen Voltage - See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	3.1	Watts
Screen Dissipation	0.65	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias	0.25	Megohms

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS, Each Section

Plate Voltage	125	Volts
Suppressor, Connected to Cathode at Socket		
Screen Voltage	125	Volts
Cathode-Bias Resistor	56	Ohms
Plate Resistance, approximate	0.2	Megohms
Transconductance	13000	Micromhos
Plate Current	11	Milliamperes
Screen Current	3.8	Milliamperes
Grid-Number 1 Voltage, approximate		
Ib = 20 Microamperes	-3	Volts

NOTES

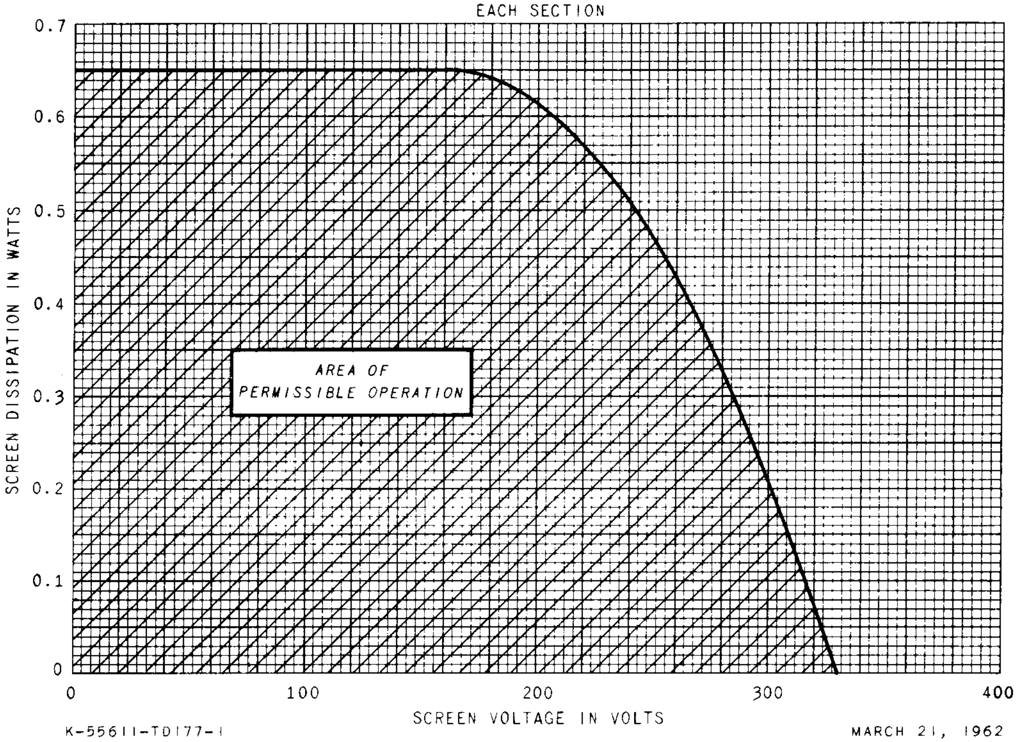
* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

‡ Heater current of a bogey tube at Ef = 6.3 volts.

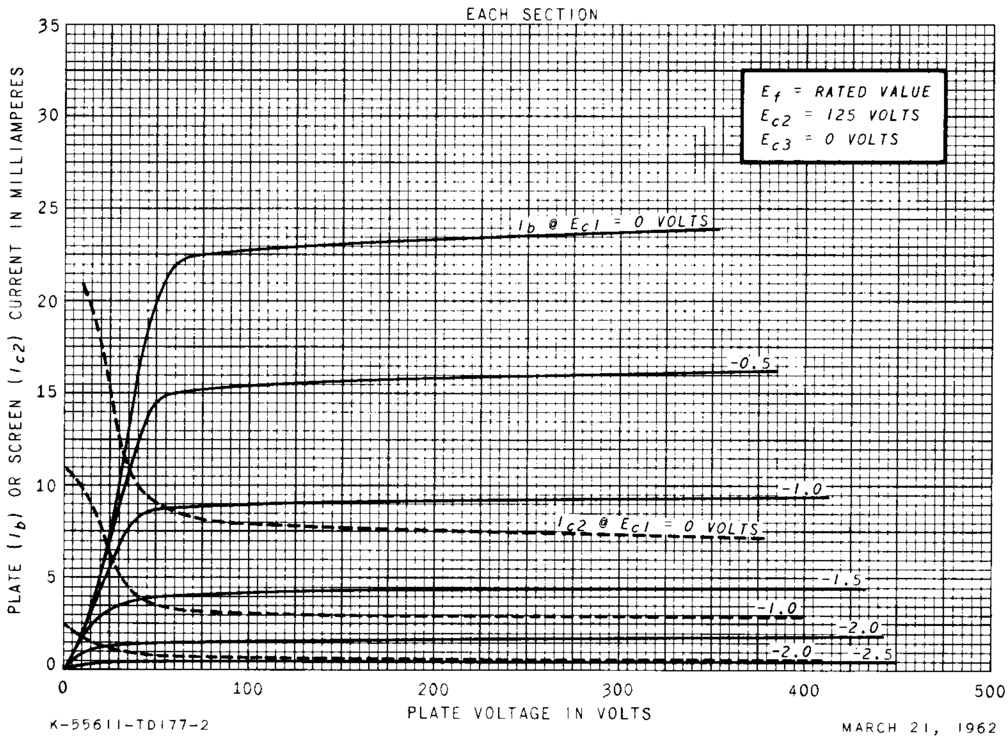
§ With external shield (EIA 309) connected to cathode of section under test unless otherwise indicated.

¶ With external shield (EIA 309) connected to ground.

SCREEN RATING CHART

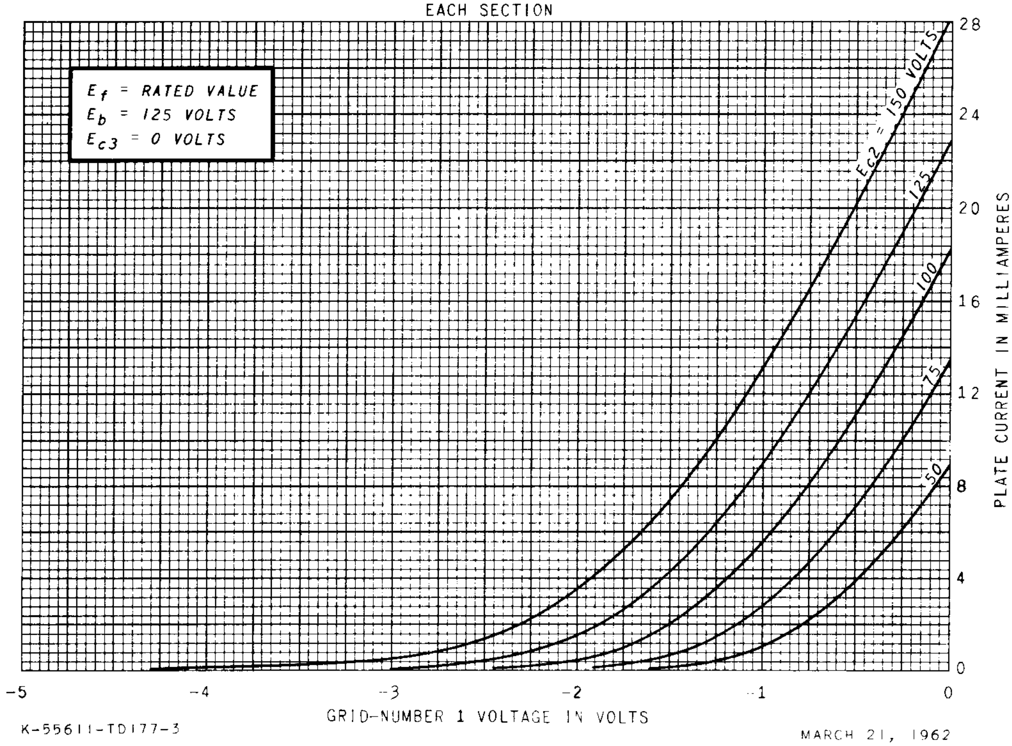


AVERAGE PLATE CHARACTERISTICS



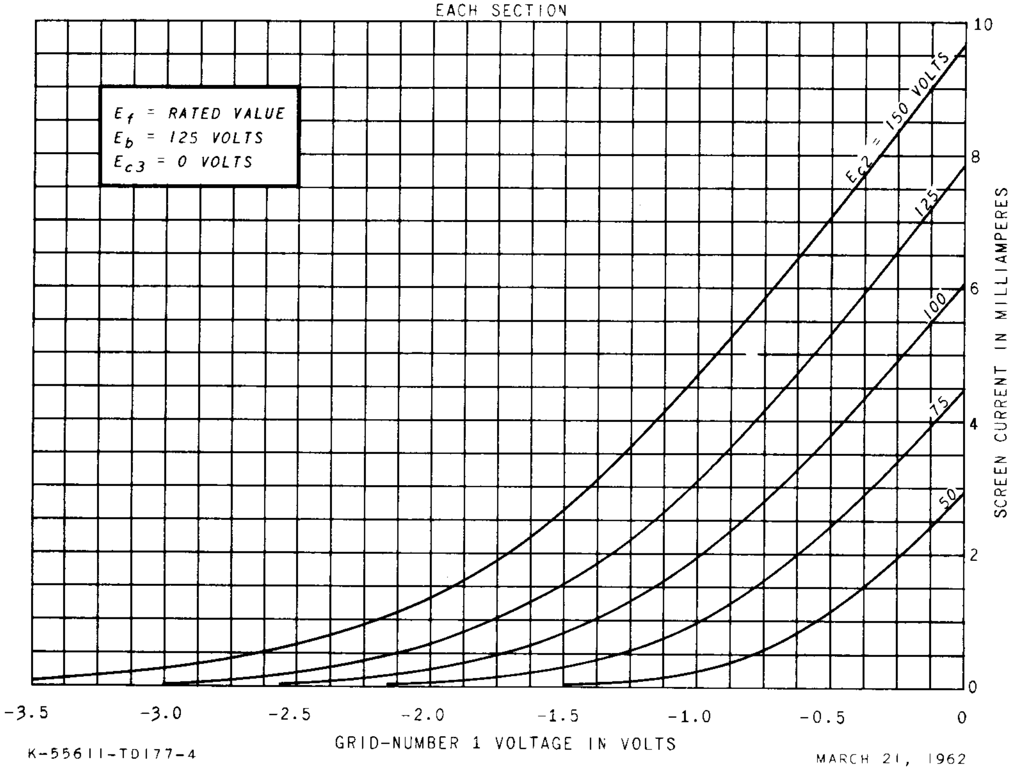
AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION

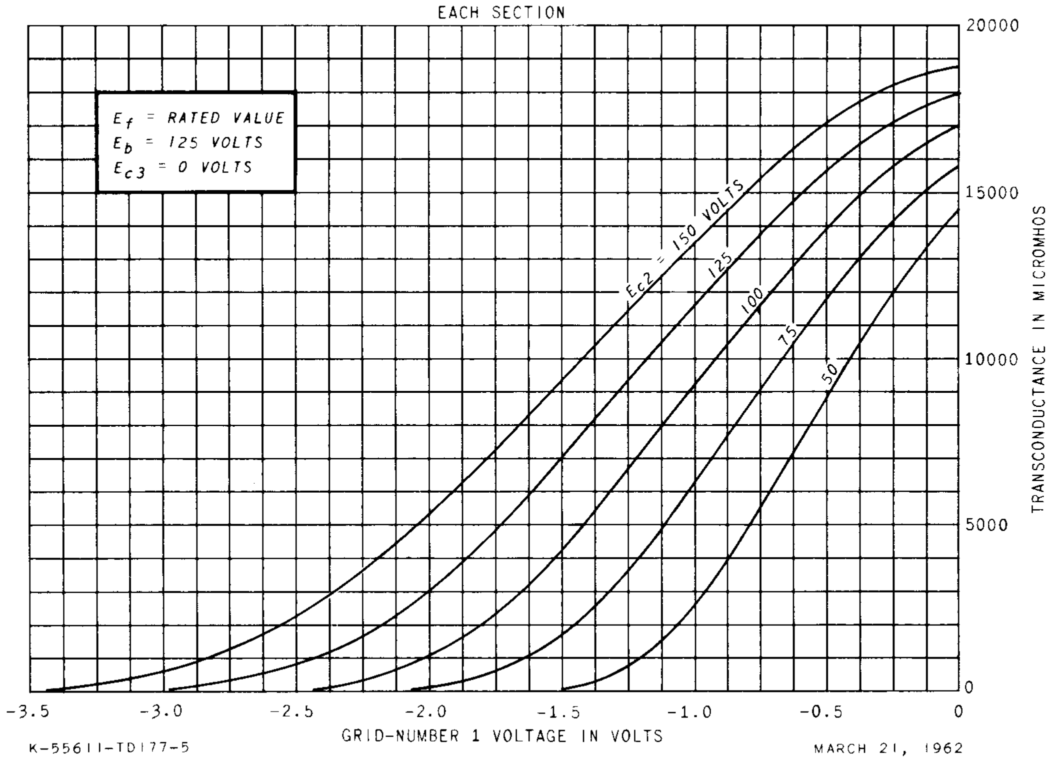


AVERAGE TRANSFER CHARACTERISTICS

EACH SECTION



AVERAGE TRANSFER CHARACTERISTICS



TUBE DEPARTMENT
GENERAL ELECTRIC
Owensboro, Kentucky